BIGGS ENGINEERING ASSOCIATES
P. O. BOX 209
WASHINGTON, N. J. 07882
TELEPHONE 689-1004

May 25, 1982

Mr. Henry Gluckstern, Esquire
Water Enforcement Branch
26 Federal Plaza
New York, New York 10278

Subject: Lancia Oil Company, Hackensack, N.J.
Spill Prevention and Control Plan

Dear Mr. Gluckstern:

This is being written at the direction of Mr. Hugo Lance as a response to your letter of April 12, 1982. We wish to advise as follows:

1. Referring to our drawing Proposed Alterations, Spill Control Plan for Lancia Oil Sheet 2 of 2 dated October 27, 1981, you will note that the ground surface is pitched to direct possible spills at the loading rack south-eastward into a catchment area.

2. The north wall of the dike has been reconstructed with compacted clay fill material obtained off-site.

3. The inside of the existing block dike wall will be coated with bituminous sealing compound in those areas where earth (clay) fill is not to be placed against both the inside and outside of the wall.

4. The existing soil at the site is tight clay. We have determined this from test borings which were made for the garage and office in 1975 and from the logs of the borings made by the New Jersey Department of Transportation for the Route 80 Viaduct on the south side of the Lancia property. This clay is impervious to oil.

5. We are not sure what you mean in the phrase "hydrostatic pressure wave". We do not believe that there would be a wave of oil hitting the dike; this could only happen if there were to be a massive rupture of a tank permitting the contents to discharge

instantaneously. Instead, it is more likely that there would be a gradual flow. We also were concerned about the strength of the block wall, and on our drawing have shown earth fill to be placed on both sides of the existing wall and the use of pilasters to stiffen the wall where it would not be practical to place the earth fill. Perhaps your inspector did not examine the drawing when he was at the site. It is our opinion that, when braced as we have shown, the wall will be capable of supporting the pressure of the oil in the event of a major spill.

6. In regard to the capacity of the diked area, we are now recommending that the dike be raised to elevation 15.0. The volumes are as tabulated:

Dike at Elev 12.0	523,000	Gal.
Raise dike to 15.0, add	335,250	
Total Volume:	858,250	Gal.
Assume 4.8" Rainfall	- 44,700	
Volume of 42' Diam. Tank	- 82,900	
Net Volume :	730,650	Gal.
Gross Volume largest tank	800,000	Gal.
Volume occupied by foam system	85,000	
Net Volume Product Storage	715,000	Gal.

In our previous calculation we had not deducted the volume allowance for the foam distribution system. The 4.8-inch rainfall is equivalent to a ten-year storm which means that there is only a ten (10) percent chance of such a storm occurring at any particular time. We feel that this is a more reasonable approach than allowing ten (10) percent of the volume for rainfall.

7. We believe that the drawings which accompanied the Plan do indeed accurately reflect the narrative portion of the Plan.

Very truly yours,

Charles R. Biggs, P.E.

cc: Hugo Lance

Attachment #1 Page 2 of 2